

Notice of Allowability**Application No.**

10/633,444

Examiner

KAN YUEN

Applicant(s)

ROEDER, MICHAEL T.

Art Unit

2464

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/24/2011.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/Kan Yuen/
Examiner, Art Unit 2464

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Toan Tran on 06/14/2011

The application has been amended as proposed as follows:

1. (Currently Amended) A method of load balancing between a plurality of routers by automated resetting of gateways, the method comprising:

receiving a packet at a first router from a source host to be forwarded to a destination host;

identifying a current load on the first router;

determining whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router;

applying an algorithm at the first router to select a second router from the plurality of routers to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers; and

sending an ICMP redirect message from the first router to the source host to reset a default gateway of the source host to be the second router for packets destined to the destination host.

2. (Original) The method of claim 1, wherein the algorithm comprises a pseudo-random algorithm.

3. (Original) The method of claim 1, wherein the algorithm selects the next default gateway using a round robin type selection process.

4. (Previously Presented) The method of claim 1, wherein the algorithm comprises a hash function, wherein an output of the hash function returns an index of a router to be used to route subsequent packets with a same hash value.

5. (Original) The method of claim 4, wherein the hash function is a function of any combination of the IP addresses of the destination and source hosts of the packet.

6. (Original) The method of claim 1, wherein the algorithm is load based, and further comprising communicating load levels amongst the plurality of routers.

7. (Currently Amended) An apparatus for routing packets with a load balancing capability involving automated resetting of gateways, the apparatus comprising:

a ~~receiver~~ first router configured to receive a packet from a source host to be ~~forward~~ routed to a destination host;

a selection module configured to identify a current load on the first router, determine whether the packet is to be routed by another one of the plurality of routers based upon the identified current load of the first router, apply an algorithm to select

~~another a second router from the plurality of routers to~~ be a next gateway of the source host for packets destined to the destination host; and

a transmission module configured to send an ICMP redirect message to the source host to reset a current gateway of the source host to be said second router for packets destined to the destination host.

8. (Original) The apparatus of claim 7, wherein the selection module comprises a pseudo-random number generator.

9. (Original) The apparatus of claim 7, wherein the selection module applies a round-robin type algorithm to select the next gateway.

10. (Original) The apparatus of claim 7, wherein the selection module applies a hash function.

11. (Previously Presented) The apparatus of claim 10, wherein the hash function is a function of a source IP address.

12. (Original) The apparatus of claim 10, wherein the hash function is a function of a combination of the source and destination IP addresses.

13. (Original) The apparatus of claim 7, wherein the apparatus is configured to communicate load levels to and receive load levels from other routing apparatus, and wherein the selection module applies a load-based algorithm.

14. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a weighted hash algorithm.

15. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a weighted round robin algorithm.

16. (Original) The apparatus of claim 13, wherein the load-based algorithm comprises a pseudo-random algorithm.

17-23. (Canceled).

Allowable Subject Matter

2. Claims 1-16 are allowed.

The previously-cited prior art failed to disclose the features of identifying a current load on the first router; and applying an algorithm at the first router to select a second router from the plurality of routers to be a next gateway for the source host for packets destined to the destination host in response to a determination that the packet is to be routed by another one of the plurality of routers, as recited in claims 1 and 7.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAN YUEN whose telephone number is (571)270-1413. The examiner can normally be reached on Monday-Friday 11:00a.m-6:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kan Yuen/
Examiner, Art Unit 2464

/Pao Sinkantarakorn/
Primary Examiner, Art Unit 2464
6/16/2011

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